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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Payman Zarkesh-Ha

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LSI CORPORATION  
1621 BARBER LANE  
MS: D-106  
MILPITAS, CA 95035

EXAMINER

KIM, SU C

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/764,803	<b>Applicant(s)</b> ZARKESH-HA ET AL.	
	<b>Examiner</b> SU C. KIM	<b>Art Unit</b> 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 4/10/2008 have been fully considered but they are not persuasive.

In response to applicant amendment, it is well known that the term "a single platform" is equivalent to a single state. Applicant is implying that the prior art is not single platform and implies that it is multiple platform or multiple states. However, Applicant fails to direct the examiner where this argument is valid therefore applicant's argument is moot.

Also Voogel (US 6,157,213) discloses a single platform 300 as a single wafer (Fig. 4A).

Therefore, the rejection of claims 1-5, 8-13, 16-17 and 24 under 35 U.S.C. 103(a) is deemed proper.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "N by M" (which one is column M or N? which one is row, N or M?) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities:

In claim 1, reciting “according to an order from a customer” is indefinite because who is cutting a customer or other, who is ordering from?, perhaps, “an order for a customer” may be proper.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 8-13, 16-17, & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Voogel (US 6,362,651) in view of Shigeki et al. (US 2001/0011345).

**Regarding claims 1, 9, & 17**, Voogel discloses a method for providing field programmable platform array units, comprising:

cutting N by M array of platform array units 300 from a field programmable platform array wafer 400 according to an order from a customer, N and M being positive integers, said field programmable platform array wafer 300 having all silicon layers and metal layers already built (Col. 2, lines 65-67, Col. 3 lines1-3) and including a plurality of platform array units (Fig. 4(A)), said plurality of platform array units being field programmable by a customer( note: a field programmable gate array) and interconnect 610 between said plurality of platform array units 450(1) & 450(2)being pre-routed on chip (Fig. 6); and packaging and testing (Col.6, lines 59-65) said N by M array of platform array units.

Voogel fails to teach each of said plurality of platform array units including at least one core and at least one processor.

However, Shigeki disclose a field programmable gate array including at least one core and at least one processor (Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) claimed invention was made to provide each of said plurality of platform array units including at least one core and at least one processor, Voogel with each of said plurality of platform array units including at least one core and at least one

processor as taught by Shigeki in order to produce efficient process data (paragraph 0008).

**Regarding claims 2 & 10**, as applied to claims 1 & 9, Voogel and Shigeki in combinations disclose that programming said N by M array of platform array units by said customer (note: all the FPGA are produced for the customer).

**Regarding claims 3 & 11**, as applied to claims 12 & 10, Voogel and Shigeki in combinations disclose that said programming is performed for at least one of unit specialization, unit role assignment, and inter-unit communications (Shigeki, Fig. 1).

**Regarding claims 4, 12 & 24**, as applied to claims 2, 10, & 17, Voogel and Shigeki in combinations disclose that said programming is performed with firmware (Voogel, col. 1 lines 18-26).

**Regarding claims 5 & 13**, as applied to claims 1 & 9, Voogel and Shigeki in combinations disclose that said N by M array of platform array units are within a single platform (Shigeki, Fig. 1).

**Regarding claims 8 & 16**, as applied to claims 1 & 9, Voogel and Shigeki in combination discloses that storing said field programmable platform array wafer (Voogel, col. 1 lines 18-26).

6. Claims 6 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Voogel (US 6,362,651) in view of Shigeki et al. (US 2001/0011345) and further in view of Mastro et al. (US 2002/0091977).

**Regarding claims 6 & 14**, as applied to claims 5 & 13, Voogle and Shigeki in combinations discloses that said single platform

Voogle and Shigeki in combinations fail to teach said single platform is a storage area network (SAN) platform.

However, Mastro suggests said single platform 94 (Fig. 5, FPGA) is a storage area network (paragraph 0067).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) claimed invention was made to provide Voogle and Shigeki in combination with said single platform is a storage area network (SAN) platform as taught by Mastro in order to enhance functionality.

7. Claims 7 & 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Voogel (US 6,362,651) in view of Shigeki et al. (US 2001/0011345) and further in view of Or-bach (US 2001/0038297)

**Regarding claims 7 & 15**, as applied to claims 5 & 13, Voogle and Shigeki in combinations disclose said single platform.

Voogle and Shigeki in combinations fail to teach said single platform is a digital signal processing (DSP) platform.

However, Or-bach discloses that said single platform is a digital signal processing (DSP) platform (Fig. 57, note: DSP).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) claimed invention was made to provide Voogle and Shigeki in

combinations with said single platform is a digital signal processing (DSP) platform as taught by Orbach in order to produce highly efficient logic cells and logic functionalities (paragraph 0031).

8. Claims 18 & 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Voogel (US 6,362,651) in view of Shigeki et al (US 2001/0011345) and further in view of Lee et al. (US 6,222,212).

**Regarding claims 18 & 20-23**, Voogel and Shigeki in combinations disclose that said semiconductor device includes top pad and said top pad 456 of said semiconductor device are used as a routing layer for the pre-touted interconnect 610 between said plurality of platform array units (Voogel, Fig. 6).

Voogel and Shigeki in combinations fails to teach top pad are aluminum, metal bumps, copper, polysilicon, or silicon layer.

However, Lee discloses that interconnection (routing layer) can be made of aluminum, copper, polycrystalline silicon, or metal bumps 908 (Col. 5, lines 30-61, Fig. 9B).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) claimed invention was made to provide Voogel and Shigeki in combinations with interconnection (routing layer) can be made of aluminum, copper, polycrystalline silicon as taught by Lee in order to enhance electrical conductivity.



9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Voogel (US 6,362,651) in view of Shigeki et al (US 2001/0011345) and further in view of Hung et al. (US 6,396,129).

**Regarding claim 19**, as applied to claim 18, Voogel and Shigeki in combinations disclose that said semiconductor device.

Voogel and Shigeki in combinations fail to teach encapsulation of lower metal layers of said semiconductor device.

However, Huang discloses encapsulation 150 of lower copper layer (Fig. 3C, col. 4, lines 20-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant(s) claimed invention was made to provide Voogel and Shigeki in combinations with encapsulation of lower copper layer as taught by Huang in order to enhance bonding strength.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SU C. KIM whose telephone number is (571)272-5972. The examiner can normally be reached on Monday - Friday, 10:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Su C Kim/  
Examiner, Art Unit 2823

/W. David Coleman/  
Primary Examiner, Art Unit 2823